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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,598	07/11/2003	Dean L. Kamen	1062/D77	2911

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EXAMINER

ROYAL, PAUL

ART UNIT PAPER NUMBER

3611

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/617,598

Applicant(s)

KAMEN ET AL.

Examiner

Paul Royal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 01/11/2005 has been entered.

Response to Arguments

2. Applicant's arguments filed 01/11/05 have been fully considered but they are not persuasive. See below explanation

Applicant argues the sensor module (Sensor A, Sensor B) of Kamen et al. (US 5,791,425) senses a distance to a stair riser and ground, respectively, and the sensor module is not used by the controller for commanding the motorized drive arrangement to apply torque to one of more of the ground-contacting elements as a function of the attitude of the support platform.

The Examiner disagrees because the attitude of the support platform of Kamen et al. '425 with respect to the surface is understood to be the same as applicant's disclosed "attitude" limitation and the distance of the support platform to a stair riser and ground are input signals used by the controller (272) when in the "lean mode" in which the center of gravity of the support platform is shifted forward and a "pitch" error is created in the cluster balancing algorithm which is in turn applied to torque to the cluster motors which rotates the clusters and causes the support platform to ascend the stair, see column 21, lines 13-63.

Further, it is noted the two sensors are positioned to monitor the support platforms position with respect to a horizontal axis and a vertical axis, these sensor

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signals provides the support platform orientation with respect to the monitored axis which is understood to be the same as applicant's "attitude" limitation.

While applicant has endeavored to describe "pitch" and "attitude" as distinguishable limitations, the Examiner has not been persuaded that the sensors of Kamon et al. '425 does not provide "attitude" information as recited in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 4, 8, 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamen et al. (5,791,425).

Kamen et al. '425 teaches a transporter for transporting a load over a surface, the transporter comprising:

a support platform (461) for supporting the load, the support platform (461) characterized by a fore-aft axis, a lateral axis, and an orientation with respect to the surface, the orientation referred to as an attitude;

at least one ground-contacting element (463) coupled to the support platform in such a manner that the attitude of the support platform is capable of variation;

a motorized drive arrangement (462) for driving the at least one ground-contacting elements;

a sensor module (Sensor A, Sensor B) for generating a signal characterizing the attitude of the support platform; and

a controller (272) for commanding the motorized drive arrangement to apply a torque to one or more of the ground-contacting elements as a function of the attitude of the support platform or based on a position of a center of mass of the load relative to the at least one ground-contacting element;

a user interface (561), wherein the attitude of the support platform is capable of variation based on a signal generated by the user interface, wherein the controller commands motion in the fore-aft and lateral planes, such as pitching and rolling generated by turning the vehicle via the user interface.

For claim 4, note Sensor A senses the distance between a point on the platform and a position on the surface disposed at a specified angle with respect to the support platform.

For claim 8, note Kamen et al. teaches the sensor can be an ultrasonic distance sensor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamen et al. '425, as applied to claim 1, in view of Woods et al. (4,468,050).

Kamen et al. '425 teaches a vehicle including the claimed limitations except wherein one or more ground-contacting elements are flexibly coupled to the support platform in such a manner that the attitude of the support platform is capable of variation based on a position of a center of mass of the load relative to the at least one ground-contacting element.

Woods et al. teaches an adaptive suspension system (16) for use on vehicles wherein one or more ground-contacting elements (10) are flexibly coupled to a support platform (14) in such a manner that the attitude of the support platform (14) is capable of variation, to provide an improved vehicle suspension system which will automatically adjust itself during vehicle travel to provide optimum ride and handling characteristics under a wide variety of driving conditions.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transporter of Kamen et al. '425, to include an adaptive suspension system wherein one or more ground-contacting elements are flexibly coupled to a support platform in such a manner that the attitude of the support platform is capable of variation, as taught by Woods et al., to provide an improved vehicle suspension system which will automatically adjust itself during vehicle travel to provide optimum ride and handling characteristics under a wide variety of driving conditions.

5. Claims 5-7, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamen et al. '425, as applied to claim 3, in view of Sugasawa (US 4,749,210).

Kamen et al. '425, as applied to claim 3, teaches a vehicle having the claimed limitations except: a first component that remains in a substantially fixed vertical position relative to the surface,

wherein the at least one distance sensor senses the distance between a fiducial point on the platform and the first component,

wherein the attitude of the support platform is capable of variation based at least on a signal generated by a remote control device, and

the vehicle including a powered strut coupled to the platform, the powered strut capable of varying the attitude of the support platform based at least on the signal generated by the remote control device.

Sugasawa teaches a vehicle having a first component (axle) that remains in a substantially fixed vertical position relative to the surface, wherein an at least one distance sensor (16/202) which senses the distance between a fiducial point on the platform/vehicle body and the first component (axle), see column 8, lines 48 to column 9, line 27, and wherein the attitude of the support platform (vehicle body) is capable of variation based at least on a signal generated by a remote control device (170), and the vehicle including a powered strut (10) coupled to the platform, the powered strut capable of varying the attitude of the support platform based at least on the signal generated by the remote control device, to provide a suspension control system which

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allows adjustment of suspension characteristics or suspension control characteristics more precisely fitting the individual driver's feeling.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the vehicle of Kamen et al. '425, as applied to claim 3, to include a first component that remains in a substantially fixed vertical position relative to the surface, wherein an at least one distance sensor which senses the distance between a fiducial point on the platform and the first component, and wherein the attitude of the support platform (vehicle body) is capable of variation based at least on a signal generated by a remote control device, the vehicle including a powered strut coupled to the platform, the powered strut capable of varying the attitude of the support platform based at least on the signal generated by the remote control device, as taught by Sugawara, to provide a suspension control system which allows adjustment of suspension characteristics or suspension control characteristics more precisely fitting the individual driver's feeling.

For claim 6, note the linkage 258 is a first component which is fixed relative to the axle where the linkage follows the movement of the axle to generate an axle position signal.

Note the methods of controlling the vehicle of claims 17-20 are the method of operation of the invention disclosed in Kamen et al. '425, as applied to claim 3, in view of Sugawara.

Note, the sensor of Sugawara, as applied above, is understood to be an additional sensor in the sensor module that can also include other types of sensors.

Conclusion

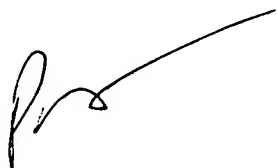
6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Royal whose telephone number is 571-272-6652. The examiner can normally be reached on 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley D. Morris can be reached on 571-272-6651. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



P. Royal
4/18/05

Paul Royal
Examiner
Art Unit 3611



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